#### RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

DATE: 12/14/1999 TIME: 16:43:39

INPUT SET: S34210.raw

This Raw Listing contains the General Information Section and up to the first 5 pages.

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1
                                       SEQUENCE LISTING
 2
 3
     (1)
            General Information:
          (i) APPLICANT: Ni, Jian
                      Rosen, Craiq A.
 7
                      Pan, James G.
 8
                      Gentz, Reiner L.
                      Dixit, Vishva M.
 9
10
         (ii) TITLE OF INVENTION: Death Domain Containing Receptor 4 (DR4: Death
11
                               Receptor 4), Member of the TNF-Receptor
12
13
                               Superfamily and Binding to Trail (AP02-L)
14
15
        (iii) NUMBER OF SEQUENCES: 12
16
         (iv) CORRESPONDENCE ADDRESS:
17
18
               (A) ADDRESSEE: HUMAN GENOME SCIENCES, INC.
19
               (B) STREET: 9410 KEY WEST AVENUE
20
               (C) CITY: ROCKVILLE
               (D) STATE: MD
21
               (E) COUNTRY: US
22
               (F) ZIP: 20850
23
24
          (v) COMPUTER READABLE FORM:
25
26
               (A) MEDIUM TYPE: Floppy disk
               (B) COMPUTER: IBM PC compatible
27
28
               (C) OPERATING SYSTEM: PC-DOS/MS-DOS
29
               (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
30
         (vi) CURRENT APPLICATION DATA:
31
32
               (A) APPLICATION NUMBER: TO BE ASSIGNED
               (B) FILING DATE: HEREWITH
33
34
               (C) CLASSIFICATION:
35
36
         (vi) PRIOR APPLICATION DATA:
               (A) APPLICATION NUMBER: 09/013,895
37
38
               (B) FILING DATE: 27-JAN-1998
39
               (C) CLASSIFICATION:
40
41
       (viii) ATTORNEY/AGENT INFORMATION:
42
               (A) NAME: STEFFE, ERIC K.
               (B) REGISTRATION NUMBER: 36,688
43
               (C) REFERENCE/DOCKET NUMBER: 1488.1300004
44
45
46
         (ix) TELECOMMUNICATION INFORMATION:
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# RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

|          |         |        |                            |       |         |             |       |             |               |        |      | II  | <b>VPUT</b> | SET: S | 534210.raw |
|----------|---------|--------|----------------------------|-------|---------|-------------|-------|-------------|---------------|--------|------|-----|-------------|--------|------------|
| 47       |         | (A)    | TELEP                      | HONE  | : (2    | 02)         | 371-  | 2600        |               |        |      |     |             |        |            |
| 48       |         | (B)    | TELEF                      | AX:   | (202    | 371 (       | -254  | 0           |               |        |      |     |             |        |            |
| 49       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 50       |         |        |                            | :     |         |             |       |             |               |        |      |     |             |        |            |
| 51       | (2) INF | ORMATI | ON FOR                     | SEQ   | ID 1    | NO:1        | :     |             |               |        |      |     |             |        |            |
| 52<br>53 | /;      | ) GEOU | ENCE C                     | אממגע | משחרים  | ·<br>Temti  | ce.   |             |               |        |      |     |             |        |            |
| 53<br>54 | (1      |        | LENGT                      |       |         |             |       | rc          |               |        |      |     |             |        |            |
| 55       |         |        | TYPE:                      |       |         |             | _     | - 5         |               |        |      |     |             |        |            |
| 56       |         |        | STRAN                      |       |         |             |       |             |               |        |      |     |             |        |            |
| 57       |         |        | TOPOL                      |       |         |             | J – - |             |               |        |      |     |             |        |            |
| 58       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 59       | (ii     | ) MOLE | CULE T                     | YPE:  | DNA     | (ge:        | nomi  | c)          |               |        |      |     |             |        |            |
| 60       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 61       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 62       | (ix     | ) FEAT |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 63       |         | 1 1    | NAME/                      |       |         |             |       |             |               |        |      |     |             |        |            |
| 64       |         | (B)    | LOCAT                      | ION:  | 19.     | .142        | 2     |             |               |        |      |     |             |        |            |
| 65       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 66       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 67<br>68 | (20)    | ) CEOU | ENCE D                     | ECCD1 | r nm r/ | ONT.        | GEO.  | TD M        | O.1.          |        |      |     |             |        |            |
| 69       | (XI     | ) SEQU | ENCE D                     | ESCK. | LPII    | JIN: 1      | OEQ.  | או עד       | J: 1:         |        |      |     |             |        |            |
| 70       | TTCGGGC | ACG AG | GGCAGG                     | АТС   | GCG     | CCA         | CCA   | CCA         | GCT           | ΔGΔ    | СΤΣ  | СУТ | СТЪ         | GGT    | 5 <b>1</b> |
| 71       | 110000  |        |                            |       |         |             |       | Pro         |               |        |      |     |             |        | 31         |
| 72       |         |        |                            | 1     |         |             |       | 5           |               | 5      |      |     | 10          | 1      |            |
| 73       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 74       | GCG TTC | CTG G  | CA GTG                     | ACT   | CCG     | AAT         | CCC   | GGG         | AGC           | GCA    | GCG  | AGT | GGG         | ACA    | 99         |
| 75       | Ala Phe | Leu A  | la Val                     | Thr   | Pro     | Asn         | Pro   | Gly         | Ser           | Ala    | Ala  | Ser | Gly         | Thr    |            |
| 76       |         |        | 15                         |       |         |             | 20    |             |               |        |      | 25  |             |        |            |
| 77       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 78       | GAG GCA |        |                            |       |         |             |       |             |               |        |      |     |             |        | 147        |
| 79       | Glu Ala |        | та ата                     | Thr   | Pro     |             | ьys   | vai         | Trp           | GIY    |      | ser | Ala         | GLY    |            |
| 80<br>81 |         | 30     |                            |       |         | 35          |       |             |               |        | 40   |     |             |        |            |
| 82       | AGG ATT | GAA C  | ירא רכא                    | GGC   | ccc     | GGC         | CGA   | GGA         | GCG           | כידיכי | ССТ  | ACC | TCC         | ΔТС    | 195        |
| 83       | Arg Ile |        |                            |       |         |             |       |             |               |        |      |     |             |        | 100        |
| 84       | 45      |        |                            | 1     | 50      | <b>U</b> -1 | 5     | <b>U</b> -1 |               | 55     |      |     | 501         |        |            |
| 85       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 86       | GGA CAG | CAC G  | GA CCC                     | AGT   | GCC     | CGG         | GCC   | CGG         | GCA           | GGG    | CGC  | GCC | CCA         | GGA    | 243        |
| 87       | Gly Gln | His G  | ly Pro                     | Ser   | Ala     | Arg         | Ala   | Arg         | Ala           | Gly    | Arg  | Ala | Pro         | Gly    |            |
| 88       | 60      |        |                            | 65    |         |             |       |             | 70            |        |      |     |             | 75     |            |
| 89       |         |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
| 90       | CCC AGG |        |                            |       |         |             |       |             |               |        |      |     |             |        | 291        |
| 91       | Pro Arg | Pro A  |                            | Glu   | Ala     | Ser         | Pro   | _           | Leu           | Arg    | Val  | His | _           | Thr    |            |
| 92       |         |        | 80                         |       |         |             |       | 85          |               |        |      |     | 90          |        |            |
| 93       | מג מתח  | mmm ~  | ma ama                     | ama   | aaa     | СШС         | ama   | ama         | <b>C17</b> C1 | СШС    | Om a | aam | 700         | m(1)   | 220        |
| 94<br>95 | TTC AAG |        |                            |       |         |             |       |             |               |        |      |     |             |        | 339        |
| 96       | -пелпув |        | ai vai<br>95               | val   | GTA     | val         | 100   | пеп         | G111          | val    | vaı  | 105 | Ser         | PET    |            |
| 97       |         |        | <i>- - - - - - - - - -</i> |       |         |             | 100   |             |               |        |      | 103 |             |        |            |
| 98       | GCT GCA | ACC A  | TC AAA                     | CTT   | CAT     | GAT         | CAA   | TCA         | ATT           | GGC    | ACA  | CAG | CAA         | TGG    | 387        |
| 99       | Ala Ala |        |                            |       |         |             |       |             |               |        |      |     |             |        |            |
|          |         |        | 2 -                        |       |         | - 1         |       |             |               | 1      |      |     |             |        |            |

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

| INPUT | SET: | S3421 | l0.raw |
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|            |            |       |      |     |     |         |                    |               |           |       |            |         |        |      | NPUT | SET: I     | \$3421U.raw |  |
|------------|------------|-------|------|-----|-----|---------|--------------------|---------------|-----------|-------|------------|---------|--------|------|------|------------|-------------|--|
| 100        |            |       | 110  |     |     | •       |                    | 115           |           |       |            |         | 120    |      |      |            |             |  |
| 101<br>102 | CAA        | ראידי | አርሮ  | ССТ | TTG | CCA     | GAG                | יייר <u>י</u> | тст       | CCA   | CCA        | CCA     | тст    | СУТ  | אכא  | ጥሮአ        | 435         |  |
| 102        |            |       |      |     | Leu |         |                    |               |           |       |            |         |        |      |      |            | 433         |  |
| 104        | O_u        | 125   | -    |     | 204 |         | 130                |               | Cyb       |       |            | 135     | -      |      |      | 001        |             |  |
| 105        |            |       |      |     |     |         |                    |               |           |       |            |         |        |      |      |            |             |  |
| 106        | GAA        | CGT   | CCT  | GGA | GCC | TGT     | AAC                | CGG           | TGC       | ACA   | GAG        | GGT     | GTG    | GGT  | TAC  | ACC        | 483         |  |
| 107        | Glu        | Arg   | Pro  | Gly | Ala | Cys     | Asn                | Arg           | Cys       | Thr   | Glu        | Gly     | Val    | Gly  | Tyr  | Thr        | •           |  |
| 108        | 140        | _     |      | _   |     | 145     |                    |               | _         |       | 150        | _       |        | _    | _    | 155        |             |  |
| 109        |            |       |      |     |     |         |                    |               |           |       |            |         |        |      |      |            |             |  |
| 110        | AAT        | GCT   | TCC  | AAC | AAT | TTG     | TTT                | GCT           | TGC       | CTC   | CCA        | TGT     | ACA    | GCT  | TGT  | AAA        | 531         |  |
| 111        | Asn        | Ala   | Ser  | Asn | Asn | Leu     | Phe                | Ala           | Cys       | Leu   | Pro        | Cys     | Thr    | Ala  | _    | Lys        |             |  |
| 112        |            |       |      |     | 160 |         |                    |               |           | 165   |            |         |        |      | 170  |            |             |  |
| 113        |            |       |      |     |     |         |                    |               |           |       |            |         |        |      |      |            |             |  |
| 114        |            |       |      |     | GAG |         |                    |               |           |       |            |         |        |      |      |            | 579         |  |
| 115        | ser        | Asp   | GIU  |     | Glu | Arg     | ser                | Pro           | _         | Thr   | Thr        | Thr     | Arg    |      | Thr  | AIA        |             |  |
| 116        |            |       |      | 175 |     |         |                    |               | 180       |       |            |         |        | 185  |      |            |             |  |
| 117        | TICT!      | CAC   | TICC | *** | CCA | CCA     | л С <sup>п</sup> п | ጥጥረ           | ccc       | አአጥ   | CAC        | א א ידי | ጥርጥ    | CCT  | CAC  | አጥር        | 627         |  |
| 118<br>119 |            |       |      |     | Pro |         |                    |               |           |       |            |         |        |      |      |            | 627         |  |
| 120        | Cys        | GIII  | 190  | цур | FIU | СТУ     | 1111               | 195           | AL 9      | Pom   | App        | ASII    | 200    | Αια  | Giu  | Mec        |             |  |
| 121        |            |       | 170  |     |     |         |                    | 1))           |           |       |            |         | 200    |      |      |            |             |  |
| 122        | TGC        | CGG   | AAG  | TGC | AGC | ACA     | GGG                | TGC           | CCC       | AGA   | GGG        | ATG     | GTC    | AAG  | GTC  | AAG        | 675         |  |
| 123        |            |       |      |     | Ser |         |                    |               |           |       |            |         |        |      |      |            |             |  |
| 124        | •          | 205   | •    | •   |     |         | 210                | •             |           |       | •          | 215     |        | •    |      | •          |             |  |
| 125        |            |       |      |     |     |         |                    |               |           |       |            |         |        |      |      |            |             |  |
| 126        | GAT        | TGT   | ACG  | CCC | TGG | AGT     | GAC                | ATC           | GAG       | TGT   | GTC        | CAC     | AAA    | GAA  | TCA  | GGC        | 723         |  |
| 127        | Asp        | Cys   | Thr  | Pro | Trp | Ser     | Asp                | Ile           | Glu       | Cys   | Val        | His     | Lys    | Glu  | Ser  | Gly        |             |  |
| 128        | 220        |       |      |     |     | 225     |                    |               |           |       | 230        |         |        |      |      | 235        |             |  |
| 129        |            |       |      |     |     |         |                    |               |           |       |            |         |        |      |      |            |             |  |
| 130        |            |       |      |     | ATA |         |                    |               |           |       |            |         |        |      |      |            | 771         |  |
| 131        | Asn        | GIA   | His  | Asn | Ile | Trp     | Val                | IIe           | Leu       |       | Val        | Thr     | Leu    | Val  |      | Pro        |             |  |
| 132<br>133 |            |       |      |     | 240 |         |                    |               |           | 245   |            |         |        |      | 250  |            |             |  |
| 134        | ጥጥር፤       | СТС   | ጥጥር፤ | GTG | GCT | стс     | СТС                | א יייי        | CTC       | ጥርም   | ጥርሞ        | тас     | איזיכי | aac  | TCA  | CCT        | 819         |  |
| 135        |            |       |      |     | Ala |         |                    |               |           |       |            |         |        |      |      |            | 015         |  |
| 136        | шси        |       |      | 255 |     | · · · · |                    |               | 260       | C J S | C J D      | Cyc     |        | 265  | 501  | O = 7      | •           |  |
| 137        |            |       |      |     |     |         |                    |               |           |       |            |         |        |      |      |            |             |  |
| 138        | TGT        | GGA   | GGG  | GAC | CCC | AAG     | TGC                | ATG           | GAC       | AGG   | GTG        | TGT     | TTC    | TGG  | CGC  | TTG        | 867         |  |
| 139        | Cys        | Gly   | Gly  | Asp | Pro | Lys     | Cys                | Met           | Asp       | Arg   | Val        | Cys     | Phe    | Trp  | Arg  | Leu        |             |  |
| 140        |            |       | 270  |     |     |         |                    | 275           |           |       |            |         | 280    |      |      |            |             |  |
| 141        |            |       |      |     |     |         |                    |               |           |       |            |         |        |      |      |            |             |  |
| 142        |            |       |      |     | GGG |         |                    |               |           |       |            |         |        |      |      |            | 915         |  |
| 143        | Gly        |       | Leu  | Arg | Gly | Pro     | _                  | Ala           | Glu       | Asp   | Asn        |         | His    | Asn  | Glu  | Ile        |             |  |
| 144        |            | 285   |      |     |     |         | 290                |               |           |       |            | 295     |        |      |      |            |             |  |
| 145        | ~~~        |       |      | ~~~ | ~~~ |         | ~~~                |               |           |       |            |         | ~~~    | ~~~  | ~    |            | 0.50        |  |
| 146        |            |       |      |     | GAC |         |                    |               |           |       |            |         |        |      |      |            | 963         |  |
| 147<br>148 | ьеи<br>300 | ser   | ASII | AIG | Asp | 305     | ьeu                | ser           | TILL      | rne   | va1<br>310 | ser     | GIU    | GIII | GIII | мет<br>315 |             |  |
| 148        | 300        |       |      |     |     | 303     |                    |               |           |       | 210        |         |        |      |      | 313        |             |  |
| 150        | GAA        | AGC   | CAG  | GAG | CCG | GCA     | GAT                | TTG           | ACA       | GGT   | GTC        | АСТ     | GTA    | CAG  | TCC  | CCA        | 1011        |  |
| 151        |            |       |      | -   | Pro |         | -                  | -             | -         |       |            |         | -      | -    |      |            |             |  |
| 152        |            |       |      |     | 320 |         |                    |               | - <b></b> | 325   |            |         |        |      | 330  |            |             |  |
|            |            |       |      |     |     |         |                    |               |           | -     |            |         |        |      |      |            |             |  |

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

DATE: 12/14/1999 TIME: 16:43:40

INPUT SET: S34210.raw

|            |            |      |       |               |           |           |           |              |       |          |         |          |       | I      | <b>VPUT</b>  | SET: S34 | 1210 | .raw |
|------------|------------|------|-------|---------------|-----------|-----------|-----------|--------------|-------|----------|---------|----------|-------|--------|--------------|----------|------|------|
| 153        |            |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 154        | GGG        |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      | 1059 |
| 155        | Gly        | GIU  | Ата   |               | Cys       | Leu       | Leu       | GLY          |       | Ата      | GIu     | Ala      | GIU   | _      | Ser          | GIn      |      |      |
| 156        |            |      |       | 335           |           |           |           |              | 340   |          |         |          |       | 345    |              |          |      |      |
| 157        | 3.00       | 200  | 700   | OTT C         | ama       | O III III | aa2       | CC3          | 3 3 M | CCE      | C C III | C A C    | 000   | 3 CIII | <b>C3.</b> C | 7 CM     |      | 1107 |
| 158<br>159 | AGG<br>Arg |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      | 1107 |
| 160        | Arg        | Arg  | 350   | neu           | пец       | vaı       | PIU       | 355          | ASII  | GTA      | міа     | Asp      | 360   | 1111   | Giu          | 1111     |      |      |
| 161        |            |      | 330   |               |           |           |           | 333          |       |          |         |          | 300   |        |              |          |      |      |
| 162        | CTG        | ATG  | СТС   | ጥጥሮ           | ጥጥጥ       | GAC       | AAG       | ጥጥጥ          | GCA   | AAC      | ΔΤС     | GTG      | כככ   | ጥጥጥ    | GAC          | TCC      |      | 1155 |
| 163        | Leu        |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 164        |            | 365  |       |               |           | F         | 370       |              |       |          |         | 375      |       |        |              |          |      |      |
| 165        |            |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 166        | TGG        | GAC  | CAG   | CTC           | ATG       | AGG       | CAG       | CTG          | GAC   | CTC      | ACG     | AAA      | AAT   | GAG    | ATC          | GAT      |      | 1203 |
| 167        | Trp        | Asp  | Gln   | Leu           | Met       | Arg       | Gln       | Leu          | Asp   | Leu      | Thr     | Lys      | Asn   | Glu    | Ile          | Asp      |      |      |
| 168        | 380        | _    |       |               |           | 385       |           |              | _     |          | 390     | _        |       |        |              | 395      |      |      |
| 169        |            |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 170        | GTG        | GTC  | AGA   | GCT           | GGT       | ACA       | GCA       | GGC          | CCA   | GGG      | GAT     | GCC      | TTG   | TAT    | GCA          | ATG      |      | 1251 |
| <b>171</b> | Val        | Val  | Arg   | Ala           | Gly       | Thr       | Ala       | Gly          | Pro   | Gly      | Asp     | Ala      | Leu   | Tyr    | Ala          | Met      |      |      |
| 172        |            |      |       |               | 400       |           |           |              |       | 405      | •       |          |       |        | 410          |          |      |      |
| 173        |            |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 174        | CTG        |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      | 1299 |
| 175        | Leu        | Met  | Lys   | Trp           | Val       | Asn       | Lys       | Thr          | Gly   | Arg      | Asn     | Ala      | Ser   |        | His          | Thr      |      |      |
| 176        |            |      |       | 415           |           |           |           |              | 420   |          |         |          |       | 425    |              |          |      |      |
| 177        |            |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 178        | CTG        |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      | 1347 |
| 179        | Leu        | Leu  | _     | Ala           | Leu       | Glu       | Arg       |              | Glu   | Glu      | Arg     | His      |       | Lys    | Glu          | Lys      |      |      |
| 180        |            |      | 430   |               |           |           |           | 435          |       |          |         |          | 440   |        |              |          |      |      |
| 181        | 3 mm       | ~~~  | ~~~   | ama           | mma       | ama       | a.a       | mam          | aa.   | 220      | mma     | 3 m/4    | mxa   | mm »   | CI 2 2       | C13 III  |      | 1205 |
| 182        | ATT        |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      | 1395 |
| 183<br>184 | Ile        | 445  | Asp   | ьец           | ьец       | vai       | 450       | Ser          | GIY   | гуя      | Pile    | 455      | ığı   | Leu    | GIU          | Asp      |      |      |
| 185        |            | 443  |       |               |           |           | 450       |              |       |          |         | 455      |       |        |              |          |      |      |
| 186        | GGC .      | ACA  | GGC   | тст           | GCC       | GTG       | TCC       | ፐፐር          | GAG   | TGAZ     | AGAC    | יייכי יו | րդուր | TACC   | AG.          |          |      | 1442 |
| 187        | Gly        |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 188        | 460        |      | 2     |               |           | 465       |           |              |       |          |         |          |       |        |              |          |      |      |
| 189        |            |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 190        | AGGT       | TTCC | TC T  | T'AG(         | STGT      | ra Go     | AGT       | TAAT         | CAT   | 'ATTA    | AGGT    | TTTT     | TTTT  | TT.    | TTTA!        | ACATGT   |      | 1502 |
| 191        |            |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 192        | ATAC.      | AAAG | TA A  | ATT(          | CTTAC     | GC CA     | CGT       | TAT          | GGC   | TCCI     | GCC     | TGT      | ATC   | CA T   | rcac'i       | TTGGG    |      | 1562 |
| 193        |            |      |       |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |
| 194        | AGGC'      | TGAC | GC (  | CGGT          | GAT       | CC AC     | TTG       | AGGT         | CGA   | AGTI     | CCA     | AGAC     | CAGC  | CC 1   | (GAAC        | CCAACA   |      | 1622 |
| 195        |            |      |       |               |           |           |           |              |       | <i>.</i> |         |          |       |        |              |          |      |      |
| 196        | TCGT       | GGAA | AT G  | 3CCCC         | FTCT'     | UT TA     | CAA       | AAAA         | ATAC  | CAAA     | TAA     | TCAA     | CTGC  | AA.    | rGTGC        | CATGGT   |      | 1682 |
| 197        | amam.      | ~~~  | ma .  |               | amaa      |           |           | 33.000       |       | aman     |         | ~~~      | GG3.6 |        |              |          |      | 1740 |
| 198        | G.I.C.I.   | GCCA | ATC F | 7.T.T.T.(     | CTCC      | G C'I     | AAC'I     | ACGG         | GAC   | T'C'I    | ÐAÐ.    | GCCA     | )AU   | AA '   | rcca(        | CTTGAA   |      | 1742 |
| 199<br>200 | cccc       | አረረን | AC C  | י ארי אני     | ייייטיייי | \C        | د ب ټ لله | י בי א יחיים | י הרט |          | ייתייי  | አረጥረ     | ירראר | יים יי | ימממי        | ACACA    |      | 1802 |
| 200        | CCCC       | ACGA | ט טאי | HUM           | 1017      | JA DE     | LGCF      | ZW I. I      | . GCF | CCAC     | .160    | WC I C   | JAJJ. | ,      | . GGGF       | MCMCM    |      | 1002 |
| 201        | GAGC       | AAGA | CT C  | <u>'</u> ተርተር | יייי      | AG AT     | מממי      | ממדו         | ביד ב | רים      | TGA     | AAGA     | בידב  | ידיד מ | בכככ         | ACTGA    |      | 1862 |
| 203        |            |      | (     |               |           | AI        |           |              |       |          | JA      | 101      |       | \      |              |          |      |      |
| 204        | GGCT       | CACA | TG C  | CAA           | AGGA      | ra az     | CTGG      | TTCT         | ccc   | CTGA     | GCT     | GGCC     | TCCG  | TG T   | GTTI         | CCTTA    | -    | 1922 |
| 205        |            |      | -     |               |           |           |           |              |       |          |         |          |       |        |              |          |      |      |

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#### RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

DATE: 12/14/1999 TIME: 16:43:40

|            |   |       |              |            | LAH        | DIA I | AI I    | LICA  | 1110  | 14 (  | כט וכו ל | // <del>77</del> 0 | ,000    |       |           |                | 1 114 | IE. 10.              |
|------------|---|-------|--------------|------------|------------|-------|---------|-------|-------|-------|----------|--------------------|---------|-------|-----------|----------------|-------|----------------------|
| 206        | TCA'                                    | TGGT  | GGT (        | CAAT'      | TGGA       | GG T  | GTTA    | TTTA  | G AA' | TGGA' | TTAA     | GGA                | ACAC    |       |           | SET: S         |       | . <i>raw</i><br>1982 |
| 207<br>208 | AAG                                     | GCAT' | TAT          | TTCT       | GGGA       | CA T  | TATT'   | TCTG  | G GC  | ATGT  | CTTC     | GAG                | GGTG'   | ГТТ   | CCAG      | AGGGG <i>I</i> | 4     | 2042                 |
| 209<br>210 | TTG                                     | GCAT  | GCG .        | ATCG       | GGTG       | GA C  | TGAG'   | TGGA  | A AA  | GACC' | TACC     | CTT                | 'TTAA   | rgg · | GGGG      | GCACCO         | 3     | 2102                 |
| 211<br>212 | TCC                                     | GACA  | GAC          | TGGG       | GAGC       | AA G  | ATAG    | AAGA  | A AA  | CAAA  | AAAA     | AAA                | AAAA    | AAA   |           |                |       | 2152                 |
| 213<br>214 | (0)                                     | ***** | ODMA         | m=0        | <b>505</b> | 250   |         |       |       |       |          |                    |         |       |           |                |       |                      |
| 215<br>216 | (2)                                     | INF   | ORMA         | TION       | FOR        | SEQ   | י עד    | NO: Z | :     |       |          |                    |         |       |           |                |       |                      |
| 217        |   |       | (i)          | SEQU       | ENCE       | CHA   | RACT    | ERIS' | TICS  | :     |          |                    |         |       |           |                |       |                      |
| 218        |   |       |              |            |            |       | : 46    |       |       |       | s        |                    |         |       |           |                |       |                      |
| 219        |   |       |              |            |            |       | amin    |       |       |       |          |                    |         |       |           |                |       |                      |
| 220        |   |       |              | (D         | ) TO       | POLO  | GY:     | line  | ar    |       |          |                    |         |       |           |                |       |                      |
| 221        |   |       |              |            |            |       |         |       |       |       |          |                    |         |       |           |                |       |                      |
| 222        |   | ( )   | 11)          | MOLE       | CULE       | TYP.  | E: p:   | rote  | ın    |       |          |                    |         |       |           |                |       |                      |
| 223<br>224 |   | 1.    | vi)          | C E O I II | DMC D      | חשפ   | ים ד פי | TT (N | . 017 | 0 TD  | NO:      | ٠.                 |         |       |           |                |       |                      |
| 225        |   | ١.    | Λ <b>Ι</b> / | BEQU.      | ENCE       | יכיםע | CKIF    | TON   | . 56  | Q ID  | 110.     | ٠.                 |         |       |           |                |       |                      |
| 226        | Met                                     | Ala   | Pro          | Pro        | Pro        | Ala   | Ara     | Val   | His   | Leu   | Glv      | Ala                | Phe     | Leu   | Ala       | Val            |       |                      |
| 227        | 1                                       |       |              |            | 5          |       | 5       |       |       | 10    | 1        |                    |         |       | 15        |                |       |                      |
| 228        |   |       |              |            |            |       |         |       |       |       |          |                    |         |       |           |                |       |                      |
| 229        | Thr                                     | Pro   | Asn          | Pro        | Gly        | Ser   | Ala     | Ala   | Ser   | Gly   | Thr      | Glu                | Ala     | Ala   | Ala       | Ala            |       |                      |
| 230        |   |       |              | 20         |            |       |         |       | 25    |       |          |                    |         | 30    |           |                |       |                      |
| 231        | <b>—</b> 1                              | _     | _            | -          |            | _     | ~ 7     | _     | _     |       | ~ 7      | _                  |         | ~ 7   | _         | _              |       |                      |
| 232        | Thr                                     | Pro   |              | _          | vaı        | Trp   | GIÀ     |       | ser   | Ата   | GIĀ      | Arg                |         | GIU   | Pro       | Arg            |       |                      |
| 233<br>234 |   |       | 35           |            |            |       |         | 40    |       |       |          |                    | 45      |       |           |                |       |                      |
| 235        | Glv                                     | Glv   | Glv          | Ara        | Glv        | Ala   | Leu     | Pro   | Thr   | Ser   | Met.     | Glv                | Gln     | His   | Gly       | Pro            |       |                      |
| 236        | 1                                       | 50    | _            | 3          | <b></b> 1  |       | 55      | •     |       |       |          | 60                 | <b></b> |       | <b></b> 2 |                |       |                      |
| 237        |   |       |              |            |            |       |         |       |       |       |          |                    |         |       |           |                |       |                      |
| 238        | Ser                                     | Ala   | Arg          | Ala        | Arg        | Ala   | Gly     | Arg   | Ala   | Pro   | Gly      | Pro                | Arg     | Pro   | Ala       | Arg            |       |                      |
| 239        | 65                                      |       |              |            |            | 70    |         |       |       |       | 75       |                    |         |       |           | 80             |       |                      |
| 240        |   |       | _            | _          | _          | _     | _       |       |       | _     |          |                    | _       |       |           | <b>-</b>       |       |                      |
| 241        | GIu                                     | Ala   | Ser          | Pro        | _          | Leu   | Arg     | Val   | His   | -     | Thr      | Phe                | Lys     | Phe   | Val       | Val            | •     |                      |
| 242<br>243 |   |       |              |            | 85         |       |         |       |       | 90    |          | •                  |         |       | 95        |                |       |                      |
| 243        | Va 1                                    | Glv   | Va1          | T.e.n      | T.em       | Gln   | Va 1    | Va 1  | Pro   | Ser   | Ser      | Δla                | Δla     | Thr   | Ile       | Lvs            |       |                      |
| 245        | • | 013   | V 4.1        | 100        | Leu        | 0111  | •       | •     | 105   | 501   | DCI      |                    |         | 110   |           | 2,5            |       |                      |
| 246        |   |       |              |            |            |       |         |       |       |       |          |                    |         |       |           |                |       |                      |
| 247        | Leu                                     | His   | Asp          | Gln        | Ser        | Ile   | Gly     | Thr   | Gln   | Gln   | Trp      | Glu                | His     | Ser   | Pro       | Leu            |       |                      |
| 248        |   |       | 115          |            |            |       |         | 120   |       |       |          |                    | 125     |       |           |                |       |                      |
| 249        |   |       |              |            |            |       |         |       | _     |       | _        |                    |         |       |           | _              |       |                      |
| 250        | Gly                                     |       | Leu          | Cys        | Pro        | Pro   |         | Ser   | His   | Arg   | Ser      |                    | Arg     | Pro   | Gly       | Ala            |       |                      |
| 251        |   | 130   |              |            |            |       | 135     |       |       |       |          | 140                |         |       |           |                |       |                      |

Cys Asn Arg Cys Thr Glu Gly Val Gly Tyr Thr Asn Ala Ser Asn Asn

Leu Phe Ala Cys Leu Pro Cys Thr Ala Cys Lys Ser Asp Glu Glu Glu

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170 175

#### RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

DATE: 12/14/1999 TIME: 16:43:41

INPUT SET: S34210.raw

#### \*\*\*\*\* PREVIOUSLY ERRORED SEQUENCES - EDITED \*\*\*\*\*

| 51<br>52 | (2)  | INF  | ORMA  | TION   | FOR        | SEQ    | ID 1  | NO:1      | :          |       |             |       |           |       |     |       |     |
|----------|------|------|-------|--------|------------|--------|-------|-----------|------------|-------|-------------|-------|-----------|-------|-----|-------|-----|
| 52<br>53 |      | (i   | ) SE  | OHEN   | CE C       | нара   | משרים | тетте     | cg.        |       |             |       |           |       |     |       |     |
| 54       |      | ( -  |       | ~      | ENGT       |        |       |           |            | rs    |             |       |           |       |     |       |     |
| 55       |      |      |       | •      | YPE:       |        |       |           | -          |       |             |       |           |       |     |       |     |
| 56       |      |      |       |        | TRAN       |        |       |           |            |       |             |       |           |       | •   |       |     |
| 57       |      |      | _ (   | D) T   | OPOL       | OGY:   | line  | ear       | •          |       |             |       |           |       |     |       |     |
| 58       |      |      |       |        |            |        |       |           |            |       |             |       |           |       |     |       |     |
| 59       |      | (ii  | ) MO: | LECU:  | LE T       | YPE:   | DNA   | (ge:      | nomi       | c)    |             |       |           |       |     |       |     |
| 60       |      |      |       |        |            |        |       |           |            |       |             |       |           |       |     |       |     |
| 61       |      |      | _     |        |            |        |       |           |            |       |             |       |           |       |     |       |     |
| 62       |      | (ix  |       | ATUR   |            |        |       |           |            |       |             |       |           |       |     |       |     |
| 63       |      |      |       |        | AME/       |        |       |           | _          |       |             |       |           |       |     |       |     |
| 64       |      |      | ()    | B) L(  | OCAT:      | ION:   | 19.   | . 142     | 2          |       |             |       |           | •     |     |       |     |
| 65<br>66 |      |      |       |        |            |        |       |           |            |       |             |       |           |       | •   |       |     |
| 67       |      |      |       |        |            |        |       |           |            |       |             |       |           |       |     |       |     |
| 68       |      | (vi  | ) SE  | OHEN   | CE D       | ESCR'  | тртта | N. 9      | SEO '      | א חד  | 0 • 1 •     |       |           |       |     |       |     |
| 69       |      | (201 | , 55  | QOLII. | CD D.      | DOCIC. |       | J14. I    | <u>, 2</u> | 10 11 | <b>0.1.</b> |       |           |       |     |       |     |
| 70       | TTC  | GGC  | ACG 2 | AGGG   | CAGG       | ATG    | GCG   | CCA       | CCA        | CCA   | GCT         | AGA   | GTA       | CAT   | CTA | GGT   | 51  |
| 71       |      |      |       |        |            |        |       |           |            |       |             |       |           | His   |     |       |     |
| 72       |      |      |       |        |            | 1      |       |           |            | 5     |             | _     |           |       | 10  | -     |     |
| 73       |      |      |       |        |            |        |       |           |            |       |             |       |           |       |     |       |     |
| 74       | GCG  | TTC  | CTG   | GCA    | GTG        | ACT    | CCG   | AAT       | CCC        | GGG   | AGC         | GCA   | GCG       | AGT   | GGG | ACA   | 99  |
| 75       | Ala  | Phe  | Leu   | Ala    | Val        | Thr    | Pro   | Asn       | Pro        | Gly   | Ser         | Ala   | Ala       | Ser   | Gly | Thr   |     |
| 76       |      |      |       | 15     |            |        |       |           | 20         |       |             |       |           | 25    |     |       |     |
| 77       | ~-~  | ~~-  | ~~~   | ~~~    |            |        |       |           |            |       |             |       |           |       |     | ~~~   |     |
| 78       |      |      |       |        | GCC        |        |       |           |            |       |             |       |           |       |     |       | 147 |
| 79<br>80 | GIU  | Ата  | 30    | Ата    | Ala        | Thr    | Pro   | ser<br>35 | гуѕ        | vaı   | ттр         | GIY   | ser<br>40 | ser   | Ата | GIA   |     |
| . 81     |      |      | 30    |        |            |        |       | 33        |            |       |             |       | 40        |       |     |       |     |
| 82       | AGG  | АТТ  | GAA   | CCA    | CGA        | GGC    | GGG   | GGC       | CGA        | GGA   | GCG         | CTC   | ССТ       | ACC   | TCC | ATG   | 195 |
| 83       |      |      |       |        | Arg        |        |       |           |            |       |             |       |           |       |     |       |     |
| 84       | - 3  | 45   |       |        |            | 4      | 50    |           | J          | 2     |             | 55    |           |       |     |       |     |
| 85       |      |      |       |        |            |        |       |           |            |       |             |       |           |       |     |       |     |
| 86       | GGA  | CAG  | CAC   | GGA    | CCC        | AGT    | GCC   | CGG       | GCC        | CGG   | GCA         | GGG   | CGC       | GCC   | CCĀ | GGA   | 243 |
| 87       | Gly  | Gln  | His   | Gly    | Pro        | Ser    | Ala   | Arg       | Ala        | Arg   | Ala         | Gly   | Arg       | Ala   | Pro | Gly   |     |
| 88       | 60   |      |       |        |            | 65     |       |           |            |       | 70          |       |           |       |     | 75    |     |
| 89       |      |      |       |        |            |        |       |           |            |       |             |       |           |       |     |       |     |
| 90       |      |      |       |        | CGG        |        |       |           |            |       |             |       |           |       |     |       | 291 |
| 91       | Pro  | Arg  | Pro   | Ala    | Arg        | Glu    | Ala   | Ser       | Pro        | _     | Leu         | Arg   | Val       | His   |     | Thr   |     |
| 92       |      |      |       |        | 80         |        |       |           |            | 85    |             |       |           |       | 90  |       |     |
| 93       | mma. | 774  | mmm   | ama    | ama        | CITIC  | aaa.  | CITIC     | ama.       | ama   | 03.C        | CIE/C | CILI 3    | a a m | 700 | TTC N | 320 |
| 94<br>95 |      |      |       |        | GTC<br>Val |        |       |           |            |       |             |       |           |       |     |       | 339 |
| 96       | FIIG | пур  | FIIG  | 95     | val        | vaı    | GTÅ   | vaı       | 100        | neu   | GTII        | vaı   | val       | 105   | Ser | SET   |     |
| 97       |      |      |       | در     |            |        |       |           | 100        |       |             |       |           | +00   |     |       |     |
|          |      |      |       |        |            |        |       |           |            |       |             |       |           |       |     |       |     |

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

|     |     |     |     |     |     |     |     |     |       |     |     |     |     | II. | NPUT | SET: | S34210.raw |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|------|------|------------|
| 98  | GCT | GCA | ACC | ATC | AAA | CTT | CAT | GAT | CAA   | TCA | ATT | GGC | ACA | CAG | CAA  | TGG  | 387        |
| 99  | Ala | Ala | Thr | Ile | Lys | Leu | His | Asp | Gln   | Ser | Ile | Gly | Thr | Gln | Gln  | Trp  |            |
| 100 |     |     | 110 |     | _   |     |     | 115 |       |     |     | _   | 120 |     |      | _    |            |
| 101 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 102 | GAA | CAT | AGC | CCT | TTG | GGA | GAG | TTG | TGT   | CCA | CCA | GGA | TCT | CAT | AGA  | TCA  | 435        |
| 103 | Glu | His | Ser | Pro | Leu | Gly | Glu | Leu | Cys   | Pro | Pro | Gly | Ser | His | Arg  | Ser  |            |
| 104 |     | 125 |     |     |     | -   | 130 |     | -     |     |     | 135 |     |     | _    |      |            |
| 105 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 106 | GAA | CGT | CCT | GGA | GCC | TGT | AAC | CGG | TGC   | ACA | GAG | GGT | GTG | GGT | TAC  | ACC  | 483        |
| 107 |     |     |     |     |     | Cys |     |     |       |     |     |     |     |     |      |      |            |
| 108 | 140 | 3   |     |     |     | 145 |     | 3   | - 2 - |     | 150 | 2   |     | 2   | -    | 155  |            |
| 109 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 110 | AAT | GCT | TCC | AAC | AAT | TTG | TTT | GCT | TGC   | CŤC | CCA | TGT | ACA | GCT | TGT  | AAA  | 531        |
| 111 |     |     |     |     |     | Leu |     |     |       |     |     |     |     |     |      |      |            |
| 112 |     |     |     |     | 160 |     |     |     | - 2   | 165 |     |     |     |     | 170  |      |            |
| 113 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 114 | TCA | GAT | GAA | GAA | GAG | AGA | AGT | CCC | TGC   | ACC | ACG | ACC | AGG | AAC | ACA  | GCA  | 579        |
| 115 |     |     |     |     |     | Arg |     |     |       |     |     |     |     |     |      |      |            |
| 116 |     |     |     | 175 |     | 3   |     |     | 180   |     |     |     | 5   | 185 |      |      |            |
| 117 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 118 | TGT | CAG | TGC | AAA | CCA | GGA | ACT | TTC | CGG   | AAT | GAC | AAT | TCT | GCT | GAG  | ATG  | 627        |
| 119 |     |     |     |     |     | Gly |     |     |       |     |     |     |     |     |      |      |            |
| 120 | -1- |     | 190 | -1- |     | 1   |     | 195 | 3     |     |     |     | 200 |     |      |      |            |
| 121 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      | •          |
| 122 | TGC | CGG | AAG | TGC | AGC | ACA | GGG | TGC | CCC   | AGA | GGG | ATG | GTC | AAG | GTC  | AAG  | 675        |
| 123 |     |     |     |     |     | Thr |     |     |       |     |     |     |     |     |      |      |            |
| 124 | -2  | 205 |     | -1- |     |     | 210 | -4- |       | 5   | 2   | 215 |     |     |      |      |            |
| 125 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 126 | GAT | TGT | ACG | CCC | TGG | AGT | GAC | ATC | GAG   | TGT | GTC | CAC | AAA | GAA | TCA  | GGC  | 723        |
| 127 |     |     |     |     |     | Ser |     |     |       |     |     |     |     |     |      |      |            |
| 128 | 220 | •   |     |     | -   | 225 | -   |     |       | •   | 230 |     | •   |     |      | 235  |            |
| 129 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 130 | AAT | GGA | CAT | AAT | ATA | TGG | GTG | ATT | TTG   | GTT | GTG | ACT | TTG | GTT | GTT  | CCG  | 771        |
| 131 | Asn | Gly | His | Asn | Ile | Trp | Val | Ile | Leu   | Val | Val | Thr | Leu | Val | Val  | Pro  |            |
| 132 |     | _   |     |     | 240 | _   |     |     |       | 245 |     |     |     |     | 250  |      |            |
| 133 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 134 | TTG | CTG | TTG | GTG | GCT | GTG | CTG | ATT | GTC   | TGT | TGT | TGC | ATC | GGC | TCA  | GGT  | 819        |
| 135 | Leu | Leu | Leu | Val | Ala | Val | Leu | Ile | Val   | Cys | Cys | Cys | Ile | Gly | Ser  | Gly  |            |
| 136 |     |     |     | 255 |     |     |     |     | 260   |     |     |     |     | 265 |      |      |            |
| 137 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 138 | TGT | GGA | GGG | GAC | CCC | AAG | TGC | ATG | GAC   | AGG | GTG | TGT | TTC | TGG | CGC  | TTG  | 867        |
| 139 | Cys | Gly | Gly | Asp | Pro | Lys | Cys | Met | Asp   | Arg | Val | Cys | Phe | Trp | Arg  | Leu  |            |
| 140 |     |     | 270 |     |     |     |     | 275 |       |     |     |     | 280 |     |      |      |            |
| 141 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 142 | GGT | CTC | CTA | CGA | GGG | CCT | GGG | GCT | GAG   | GAC | AAT | GCT | CAC | AAC | GAG  | ATT  | 915        |
| 143 | Gly | Leu | Leu | Arg | Gly | Pro | Gly | Ala | Glu   | Asp | Asn | Ala | His | Asn | Glu  | Ile  |            |
| 144 |     | 285 |     |     |     |     | 290 |     |       |     |     | 295 |     |     |      |      |            |
| 145 |     |     |     |     |     |     |     |     |       |     |     |     |     | ٠   |      |      |            |
| 146 |     |     |     |     |     | TCG |     |     |       |     |     |     |     |     |      |      | 963        |
| 147 | Leu | Ser | Asn | Ala | Asp | Ser | Leu | Ser | Thr   | Phe | Val | Ser | Glu | Gln | Gln  | Met  |            |
| 148 | 300 |     |     |     |     | 305 |     |     |       |     | 310 |     |     |     |      | 315  |            |
| 149 |     |     |     |     |     |     |     |     |       |     |     |     |     |     |      |      |            |
| 150 | GAA | AGC | CAG | GAG | CCG | GCA | GAT | TTG | ACA   | GGT | GTC | ACT | GTA | CAG | TCC  | CCA  | 1011       |

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

| INP | IIT | SET: | S342 | 10. | raw |
|-----|-----|------|------|-----|-----|
|     |     |      |      |     |     |

|            |                |             |             |         |            |           |          |           |            | •  |              |          |           | II             | VPUT        | SET: S. | <i>54210</i> | .raw              |
|------------|----------------|-------------|-------------|---------|------------|-----------|----------|-----------|------------|--|--------------|----------|-----------|----------------|-------------|---------|--------------|-------------------|
| 151        | Glu            | Ser         | Gln         | Glu     |            | Ala       | Asp      | Leu       | Thr        | _  | Val          | Thr      | Val       | Gln            |             | Pro     |              |                   |
| 152        |                |             |             |         | 320        |           |          |           |            | 325  |              |          |           |                | 330         |         |              |                   |
| 153        | 000            | ~~~         | ~~ <b>~</b> | a.a     | mam        | ama       | ama.     | 003       | 000        | <b>aa</b> 3                                  | <b>CIN N</b> | ~~m      | C 2 2     | ada            | mam         | CA C    |              | 1050              |
| 154        |                |             |             |         |            |           |          |           | CCG        |  |              |          |           |                |             |         |              | 1059              |
| 155<br>156 | GIY            | GIU         | ALG         | 335     | Cys        | ьеи       | пеп      | GIY       | Pro<br>340 | Ата  | GIU          | нта      | GIU       | 345            | Ser         | GIII    |              |                   |
| 157        |                |             |             | 333     |            |           |          |           | 340        |  |              |          |           | 243            |             |         |              |                   |
| 158        | AGG            | AGG         | AGG         | СТС     | СТС        | GTT       | CCA      | GCA       | AAT        | GGT  | GCT          | GAC      | CCC       | ACT            | GAG         | ACT     |              | 1107              |
| 159        |                |             |             |         |            |           |          |           | Asn        |  |              |          |           |                |             |         |              |                   |
| 160        | 3              | 5           | 350         |         |            |           |          | 355       |            | 1  |              | <u>F</u> | 360       |                |             |         |              |                   |
| 161        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             |         |              |                   |
| 162        | CTG            | ATG         | CTG         | TTC     | TTT        | GAC       | AAG      | TTT       | GCA        | AAC  | ATC          | GTG      | CCC       | TTT            | GAC         | TCC     |              | 1155              |
| 163        | Leu            | Met         | Leu         | Phe     | Phe        | Asp       | Lys      | Phe       | Ala        | Asn  | Ile          | ٧al      | Pro       | Phe            | Asp         | Ser     |              |                   |
| 164        |                | 365         |             |         |            | _         | 370      |           |            |  |              | 375      |           |                |             |         |              |                   |
| 165        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             |         |              |                   |
| 166        | TGG            | GAC         | CAG         | CTC     | ATG        | AGG       | CAG      | CTG       | GAC        | CTC  | ACG          | AAA      | AAT       | GAG            | ATC         | GAT     |              | 1203              |
| 167        | $\mathtt{Trp}$ | Asp         | Gln         | Leu     | Met        | Arg       | Gln      | Leu       | Asp        | Leu  | Thr          | Lys      | Asn       | Glu            | Ile         | Asp     |              |                   |
| 168        | 380            |             |             |         |            | 385       |          |           |            |  | 390          |          |           | •              |             | 395     |              |                   |
| 169        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             |         |              |                   |
| 170        |                |             |             |         |            |           |          |           | CCA        |  |              |          |           |                |             |         |              | 1251              |
| 171        | Val            | Val         | Arg         | Ala     | _          | Thr       | Ala      | GLY       | Pro        | _  | Asp          | Ala      | Leu       | Tyr            |             | Met     |              |                   |
| 172        |                |             |             |         | 400        |           |          |           |            | 405  |              |          |           |                | 410         |         |              |                   |
| 173        | ama            | 3.000       |             | maa     | ama        | 330       | 3 7 3    | 3.00      | ~~~        | 000  | 220          | 999      | maa       | 3 m/a          | <b>a</b> za | 7.00    |              | 1299              |
| 174        |                |             |             |         |            |           |          |           | GGA        |  |              |          |           |                |             |         |              | 1299              |
| 175<br>176 | Leu            | Mec         | гуѕ         | 415     | vaı        | ASII      | гуя      | IIII      | Gly<br>420 | Arg  | ASII         | AIa      | ser       | 425            | птъ         | TIIT    |              |                   |
| 177        |                |             |             | 413     |            |           |          |           | 420        | •  |              |          |           | 423            |             |         |              |                   |
| 178        | СТС            | СТС         | СДТ         | GCC     | ביווינב    | GAG       | AGG      | ΔTG       | GAA        | GAG  | AGA          | САТ      | GCA       | ΔΔΔ            | GAG         | AAG     |              | 1347              |
| 179        |                |             |             |         |            |           |          |           | Glu        |  |              |          |           |                |             |         |              | 1317              |
| 180        |                |             | 430         |         |            |           | 5        | 435       |            |  | 3            |          | 440       | -1-            |             | -1-     |              |                   |
| 181        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             |         |              |                   |
| 182        | ATT            | CAG         | GAC         | CTC     | TTG        | GTG       | GAC      | TCT       | GGA        | AAG  | TTC          | ATC      | TAC       | TTA            | GAA         | GAT     |              | 1395              |
| 183        | Ile            | Gln         | Asp         | Leu     | Leu        | Val       | Asp      | Ser       | Gly        | Lys  | Phe          | Ile      | Tyr       | Leu            | Glu         | Asp     |              |                   |
| 184        |                | 445         | _           |         |            |           | 450      |           | _          | _  |              | 455      |           |                |             |         |              |                   |
| 185        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             |         |              |                   |
| 186        | GGC            | ACA         | GGC         | TCT     | GCC        | GTG       | TCC      | TTG       | GAG        | TGA  | AAGAC        | CTC 1    | CTTT      | TACC           | AG          |         |              | 1442              |
| 187        | Gly            | Thr         | Gly         | Ser     | Ala        | Val       | Ser      | Leu       | Glu        |  |              |          |           |                |             |         |              |                   |
| 188        | 460            |             | •           |         |            | 465       |          |           |            |  |              |          |           |                |             |         |              |                   |
| 189        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             |         |              |                   |
| 190        | AGGT           | TTCC        | CTC T       | LTAGO   | STGT".     | ra Go     | BAGT"    | TAAT      | A CA       | [ATTA  | AGGT         | TTTT     | TTTT      | TT T           | TTA         | ACATGT  |              | 1502              |
| 191        | 3 1713 6       | ** * * * *  | 101 X 1     | \       | amma c     |           | aama     | 100 2 000 |            | -m   | 1000         | mama     | 3 ma      | מ מסי          | 7070        | mmaaa   |              | 1560              |
| 192        | ATAC           | CAAAC       | FIA A       | AATTC   | J'I'TAC    | ic Cr     | ACGTO    | 3TAT.     | r GGC      | TICCI  | rGCC         | TGTF     | MTCC      | CA             | CACI        | TTGGG   |              | 1562              |
| 193        | N.C.C.C        | יייירי א ני |             | ירירייי | ירי א ידיר | ירי אר    | יותיתי ז | ССПС      | 7 007      | \ <b>\</b> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | ייייי        | אמאנ     | ימאמנ     | יכר יו         | יכיא א כ    | CAACA   |              | 1622              |
| 194<br>195 | שטטע           | LGA         | ا عود       |         | JTWD.      | L AL      | . I 1GF  | 77.007.   | . CGF      | -MGII  | LUM          | MUMU     | .cau      |                | . JAM       | CAACA   |              | 1044              |
| 196        | тссп           | rcca z      | ነ ጥፈ        | בררר    | יייט איי   | מידי ידים | \CDDZ    | זמממ      | ነ ጥልር      | ממסי   | ጥልል          | тсаг     | עריינים ( | י ממי          | ימדמנ       | CATGGT  |              | 1682              |
| 197        | 1001           | . JOAF      | **** (      |         |            |           | ·        |           | . 1M       | -crar  | T. T.        | TOR      |           | ,. <u></u> . ] |             |         |              |                   |
| 198        | GTGT           | GCCZ        | ATC Z       | TTTC    | CTC        | G CT      | CAACT    | ACGO      | GAG        | GTCT   | GAG          | GCCZ     | GGAG      | AA 1           | CCAC        | TTGAA   |              | 1742              |
| 199        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             | <b></b> |              | - · - <del></del> |
| 200        | CCCC           | ACG         | AAG (       | ACAC    | TGT        | AG AC     | CTGC     | GAT       | GCA        | ACCAC  | CTGC         | ACTO     | CCA       | CC 1           | GGGA        | ACACA   |              | 1802              |
| 201        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             |         |              |                   |
| 202        | GAGO           | CAAGA       | ACT (       | CTGTC   | CTCA       | AG AT     | 'AAAA'   | TAAZ      | ATA        | AACT   | TGA          | AAGA     | ATTA      | ATT G          | CCCC        | ACTGA   |              | 1862              |
| 203        |                |             |             |         |            |           |          |           |            |  |              |          |           |                |             |         |              |                   |

| PAGE: | 9 |
|-------|---|
|       |   |

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

|            |            |            |            |            | 1                  | NPUT SET: S3421 | 0.raw |
|------------|------------|------------|------------|------------|--------------------|-----------------|-------|
| 204        | GGCTCACATG | CCAAAGGAAA | ATCTGGTTCT | CCCCTGAGCT | GGCCTCCGTG         | TGTTTCCTTA      | 1922  |
| 205<br>206 | TCATGGTGGT | CAATTGGAGG | TGTTAATTTG | AATGGATTAA | GGAACACCTA         | GAACACTGGT      | 1982  |
| 207        |            |            |            | ~~~~~~     | a                  | 6616166661      | 2242  |
| 208<br>209 | AAGGCATTAT | TTCTGGGACA | TTATTTCTGG | GCATGTCTTC | GAGGGTGTTT         | CCAGAGGGGA      | 2042  |
| 210        | TTGGCATGCG | ATCGGGTGGA | CTGAGTGGAA | AAGACCTACC | ${\tt CTTAATTTGG}$ | GGGGGCACCG      | 2102  |
| 211<br>212 | TCCGACAGAC | TGGGGAGCAA | GATAGAAGAA | AACAAAAAA  | ΑΑΑΑΑΑΑΑΑ          |                 | 2152  |
| 213        |            |            |            |            |                    |                 |       |
| 214        |            |            |            |            |                    |                 |       |

# SEQUENCE VERIFICATION REPORT PATENT APPLICATION US/09/448,868

DATE: 12/14/1999 TIME: 16:43:42

INPUT SET: \$34210.raw

Line

Error

Original Text

32

Wrong application Serial Number

(A) APPLICATION NUMBER: TO BE ASSIGNED

1

#### RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

DATE: 12/14/1999 TIME: 04:37:43

INPUT SET: \$34210.raw

This Raw Listing contains the General Information Section and those Sequences containing ERRORS.

SEQUENCE LISTING

```
2
 3
     (1)
           General Information:
                                                            Does Not Comply
                                                        Corrected Diskette Needed
          (i) APPLICANT: Ni, Jian
 5
                      Rosen, Craig A.
 6
 7
                      Pan, James G.
 8
                      Gentz, Reiner L.
 9
                      Dixit, Vishva M.
10
         (ii) TITLE OF INVENTION: Death Domain Containing Receptor 4 (DR4: Death
11
12
                              Receptor 4), Member of the TNF-Receptor
13
                              Superfamily and Binding to Trail (AP02-L)
14
        (iii) NUMBER OF SEQUENCES: 12
15
16
17
         (iv) CORRESPONDENCE ADDRESS:
               (A) ADDRESSEE: HUMAN GENOME SCIENCES, INC.
18
               (B) STREET: 9410 KEY WEST AVENUE
19
               (C) CITY: ROCKVILLE
20
21
               (D) STATE: MD
22
               (E) COUNTRY: US
23
               (F) ZIP: 20850
24
25
          (v) COMPUTER READABLE FORM:
26
               (A) MEDIUM TYPE: Floppy disk
27
               (B) COMPUTER: IBM PC compatible
28
               (C) OPERATING SYSTEM: PC-DOS/MS-DOS
29
               (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
30
         (vi) CURRENT APPLICATION DATA:
31
32
               (A) APPLICATION NUMBER: TO BE ASSIGNED
33
               (B) FILING DATE: HEREWITH
34
               (C) CLASSIFICATION:
35
         (vi) PRIOR APPLICATION DATA:
36
37
               (A) APPLICATION NUMBER: 09/013,895
38
               (B) FILING DATE: 27-JAN-1998
               (C) CLASSIFICATION:
39
40
       (viii) ATTORNEY/AGENT INFORMATION:
41
42
               (A) NAME: STEFFE, ERIC K.
43
               (B) REGISTRATION NUMBER: 36,688
44
               (C) REFERENCE/DOCKET NUMBER: 1488.1300004
```

#### RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

DATE: 12/14/1999 TIME: 04:37:43

INPUT SET: S34210.raw

| 46 | (ix) | TELECOMMUNICATION INFORMATION |
|----|------|-------------------------------|
| 47 | •    | (A) TELEPHONE: (202) 371-2600 |
| 48 | _    | (B) TELEFAX: (202)371-2540    |
| 49 | ·    |                               |
| 50 | •    |                               |

#### **ERRORED SEQUENCES FOLLOW:**

|   | 51<br>52 | (2) | INF  | ORMA  | TION  | FOR  | SEQ   | ID : | NO:1 | :     |      |             |     |     |     |     |     |            |     |   |
|---|----------|-----|------|-------|-------|------|-------|------|------|-------|------|-------------|-----|-----|-----|-----|-----|------------|-----|---|
|   | 53       |     | (i   | ) SE  | OHEN  | CE C | HARA  | CTER | TSTT | cs.   |      |             |     |     |     |     |     |            |     |   |
| > | 54       |     | `-   |       |       |      | H: 2  |      |      |       | rs   |             |     |     |     |     |     |            |     |   |
| - | 55       |     |      |       |       |      | nuc   |      |      | -     |      |             |     |     |     |     |     |            |     |   |
|   | 56       |     |      |       |       |      | DEDN  |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 57       |     |      |       |       |      | OGY:  |      |      | J-Y   |      |             |     |     |     |     |     |            |     |   |
|   | 58       |     |      | •     | -, -  |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 59       |     | (ii  | ) MO  | LECU: | LE T | YPE:  | DNA  | (qe  | nomi  | c)   |             |     |     |     |     |     |            |     |   |
|   | 60       |     | •    |       |       |      |       |      | `    |       | •    |             |     |     |     |     |     |            |     |   |
|   | 61       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 62       |     | (ix  | ) FE. | ATUR: | Ε:   |       |      |      |       |      |             |     |     |     |     | •   |            |     |   |
|   | 63       |     |      | (.    | A) N  | AME/ | KEY:  | CDS  |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 64       |     |      | (:    | B) L  | OCAT | ION:  | 19.  | .142 | 2     |      |             |     |     |     |     |     |            |     |   |
|   | 65       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 66       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 67       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 68       |     | (xi) | ) SE  | QUEN  | CE D | ESCR: | IPTI | ON:  | SEQ : | ID N | 0:1:        |     |     |     |     |     |            |     |   |
|   | 69       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            | 51  |   |
|   | 70       | TTC | GGC2 | ACG . | AGGG  | CAGG | ATG   | GCG  | CCA  | CCA   | CCA  | GCT         | AGA | GTA | CAT | CTA | GGT | 1          | SI  |   |
|   | 71       | 5.  | 1    |       |       |      |       |      |      |       |      |             |     |     |     |     |     | <b>ノ</b> ` | •   |   |
|   | 72       |     |      |       |       |      | Met   | Ala  | Pro  | Pro   | Pro  | Ala         | Arg | Val | His | Leu | Gly |            |     |   |
|   | 73       |     |      |       |       |      | 1     |      |      |       | 5    |             |     |     |     | 10  |     | •          |     |   |
|   | 74       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
| > | 75       | GCG | TTC  | CTG   | GCA   | GTG  | ACT   | CCG  | AAT  | CCC   | GGG  | AGC         | GCA | GCG | AGT | GGG | ACA |            | 99  | • |
|   | 76       | Ala | Phe  | Leu   | Ala   | Val  | Thr   | Pro  | Asn  | Pro   | Gly  | Ser         | Ala | Ala | Ser | Gly | Thr |            |     |   |
|   | 77       |     |      |       | 15    |      |       |      |      | 20    |      |             |     |     | 25  |     |     |            |     |   |
|   | 78       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 79       |     |      |       |       |      | ACA   |      |      |       |      |             |     |     |     |     |     |            | 147 | 1 |
|   | 80       | Glu | Ala  |       | Ala   | Ala  | Thr   | Pro  | Ser  | Lys   | Val  | ${\tt Trp}$ | Gly | Ser | Ser | Ala | Gly |            |     |   |
|   | 81       |     |      | 30    |       |      |       |      | 35   |       |      |             |     | 40  |     |     |     |            |     |   |
|   | 82       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 83       |     |      |       |       |      | GGC   |      |      |       |      |             |     |     |     |     |     |            | 195 | j |
|   | 84       | Arg |      | Glu   | Pro   | Arg  | Gly   | _    | Gly  | Arg   | Gly  | Ala         | Leu | Pro | Thr | Ser | Met |            |     |   |
|   | 85       |     | 45   |       |       |      |       | 50   |      |       |      |             | 55  |     |     |     |     |            |     |   |
|   | 86       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
|   | 87       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     | GGA |            | 243 | j |
|   | 88       | _   | Gln  | His   | Gly   | Pro  | Ser   | Ala  | Arg  | Ala   | Arg  |             | Gly | Arg | Ala | Pro | _   |            |     |   |
|   | 89       | 60  |      |       |       |      | 65    |      |      |       |      | 70          |     |     |     |     | 75  |            |     |   |
|   | 90       |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |
| • | 91       |     |      |       |       |      | GAA   |      |      |       |      |             |     |     |     |     |     |            | 291 | • |
|   | 92       | Pro | Arg  | Pro   | Ala   | Arg  | Glu   | Ala  | Ser  | Pro   | Arg  | Leu         | Arg | Val | His | Lys | Thr |            |     |   |
|   |          |     |      |       |       |      |       |      |      |       |      |             |     |     |     |     |     |            |     |   |

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/448,868

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| 93         |     |        |             |     | 80  |       |            |      |     | 85    |          |        |         | 11  | 90      | SEI.  | 334210.74W |
|------------|-----|--------|-------------|-----|-----|-------|------------|------|-----|-------|----------|--------|---------|-----|---------|-------|------------|
| 94         |     |        |             |     | 80  |       |            |      |     | 65    |          |        |         |     | 50      |       |            |
| 95         | ጥጥሮ | ΔΔG    | արդ         | GTC | GTC | GTC   | GGG        | CTC  | СТС | СТС   | CAG      | стс    | CTD     | ССТ | AGC     | тсъ   | 339        |
| 96         |     |        |             |     |     | Val   |            |      |     |       |          |        | _       |     |         |       | 553        |
| 97         |     | -, -   |             | 95  |     |       | <b>-</b> 1 |      | 100 |       | <b>~</b> |        |         | 105 |         |       |            |
| 98         |     |        |             | ,,, |     |       |            |      |     |       |          |        |         |     |         |       |            |
| 99         | GCT | GCA    | ACC         | ATC | AAA | CTT   | CAT        | GAT  | CAA | TCA   | ATT      | GGC    | ACA     | CAG | CAA     | TGG   | 387        |
| 100        |     |        |             |     |     | Leu   |            |      |     |       |          |        |         |     |         |       |            |
| 101        |     |        | 110         |     | -1- |       | ;          | 115  |     |       |          | 2      | 120     |     |         |       |            |
| 102        |     |        |             |     |     |       |            |      |     |       |          |        |         |     |         |       |            |
| 103        | GAA | CAT    | AGC         | CCT | TTG | GGA   | GAG        | TTG  | TGT | CCA   | CCA      | GGA    | TCT     | CAT | AGA     | TCA   | 435        |
| 104        | Glu | His    | Ser         | Pro | Leu | Gly   | Glu        | Leu  | Cys | Pro   | Pro      | Gly    | Ser     | His | Arg     | Ser   |            |
| 105        |     | 125    |             |     |     | _     | 130        |      | _   |       |          | 135    |         |     |         |       |            |
| 106        |     |        |             |     |     |       |            |      |     |       |          |        |         |     |         |       |            |
| 107        | GAA | CGT    | CCT         | GGA | GCC | TGT   | AAC        | CGG  | TGC | ACA   | GAG      | GGT    | GTG     | GGT | TAC     | ACC   | 483        |
| 108        | Glu | Arg    | Pro         | Gly | Ala | Cys   | Asn        | Arg  | Cys | Thr   | Glu      | Gly    | Val     | Gly | Tyr     | Thr   | •          |
| 109        | 140 |        |             |     |     | 145   |            |      | •   |       | 150      |        |         |     |         | 155   | •          |
| 110        |     |        |             |     |     |       |            |      |     |       |          |        |         |     |         |       |            |
| 111        | AAT | GCT    | TCC         | AAC | AAT | TTG   | TTT        | GCT  | TGC | CTC   | CCA      | TGT    | ACA     | GCT | TGT     | AAA   | 531        |
| 112        | Asn | Ala    | Ser         | Asn | Asn | Leu   | Phe        | Ala  | Cys | Leu   | Pro      | Cys    | Thr     | Ala | Cys     | Lys   |            |
| 113        |     |        |             |     | 160 |       |            |      |     | 165   |          |        |         |     | 170     |       |            |
| 114        |     |        |             |     |     |       |            |      |     |       |          |        |         |     |         |       |            |
| 115        |     |        |             |     |     | AGA   |            |      |     |       |          |        |         |     |         |       | 579        |
| 116        | Ser | Asp    | Glu         |     | Glu | Arg   | Ser        | Pro  | -   | Thr   | Thr      | Thr    | Arg     |     | Thr     | Ala   |            |
| 117        |     |        |             | 175 |     |       |            |      | 180 |       |          |        |         | 185 |         |       |            |
| 118        | mam | a . a  | шаа         | 222 | 003 | 003   | 3 CIII     | mma  | aaa | 7 7 m | C 7 C    | 3 3 CT | mam     | aam | 030     | » ma  | 627        |
| 119        |     |        |             |     |     | GGA   |            |      |     |       |          |        |         |     |         |       | 627        |
| 120<br>121 | Cys | GIII   | 190         | цуѕ | PIO | Gly   | IIIL       | 195  | Arg | ASII  | Asp      | ASII   | 200     | Ата | GIU     | Met   |            |
| 122        |     |        | 130         |     |     |       |            | 193  |     |       |          |        | 200     |     |         |       |            |
| 123        | TCC | ccc    | ልልር         | тсс | AGC | ACA   | ccc        | ጥርር  | CCC | ΔCΔ   | aaa      | ΔТС    | CTC     | ΔAG | GTC     | AAG   | 675        |
| 124        |     |        |             |     |     | Thr   |            |      |     |       |          |        |         |     |         |       | 0,5        |
| 125        | Cyb | 205    | <b></b> , _ | Cys | 501 |       | 210        | Cys  | 110 | 9     | 0-7      | 215    | · · · · | 272 | • • • • | _,,,  |            |
| 126        |     |        |             |     |     |       |            |      |     |       |          |        |         |     |         |       |            |
| 127        | GAT | TGT    | ACG         | CCC | TGG | AGT   | GAC        | ATC  | GAG | TGT   | GTC      | CAC    | AAA     | GAA | TCA     | GGC   | 723        |
| 128        |     |        |             |     |     | Ser   |            |      |     |       |          |        |         |     |         | _     |            |
| 129        | 220 | -      |             |     | _   | 225   | _          |      |     | -     | 230      |        | _       |     |         | 235   |            |
| 130        |     |        |             |     |     |       |            |      |     |       |          |        |         |     |         |       |            |
| 131        | AAT | GGA    | CAT         | AAT | ATA | TGG   | GTG        | ATT  | TTG | GTT   | GTG      | ACT    | TTG     | GTT | GTT     | CCG   | 771        |
| 132        | Asn | Gly    | His         | Asn | Ile | Trp   | Val        | Ile  | Leu | Val   | Val      | Thr    | Leu     | Val | Val     | Pro   |            |
| 133        |     |        |             |     | 240 |       |            |      |     | 245   |          |        |         |     | 250     |       |            |
| 134        |     |        |             |     |     |       |            |      |     |       |          |        |         |     |         |       |            |
| 135        |     |        |             |     |     | GTG   |            |      |     |       |          |        |         |     |         |       | 819        |
| 136        | Leu | Leu    | Leu         |     | Ala | Val   | Leu        | Ile  |     | Cys   | Cys      | Cys    | Ile     | _   | Ser     | Gly   |            |
| 137        |     |        |             | 255 |     |       |            |      | 260 |       |          |        |         | 265 |         |       |            |
| 138        | m~~ | ~~-    | ~~~         | ~~~ | ~~~ | 7 T ~ | m~~        | 3 m~ | ~~~ | 7~~   | a===     | m~~    | mm~     | maa | ~~~     | mma   | 0.55       |
| 139        |     |        |             |     |     | AAG   |            |      |     |       |          |        |         |     |         |       | 867        |
| 140        | cys | стХ    | -           | ASP | Pro | Lys   | cys        |      | ASP | Arg   | val      | cys    |         | rrb | Arg     | ьец   |            |
| 141<br>142 |     |        | 270         |     |     |       |            | 275  |     |       |          |        | 280     |     |         |       |            |
| 142        | ርርጥ | כיזיכי | СТУ         | CGA | GGG | CCT   | GGG        | ርርጥ  | GAG | CAC   | ል ል ጥ    | ССТ    | CAC     | ממ  | GAG     | עיייע | 915        |
| 143        |     |        |             |     |     | Pro   |            |      |     |       |          |        |         |     |         |       | 713        |
| 145        | Y   | 285    | Lu          | y   | -Ly | -10   | 290        | u    | Jau | P     | *1011    | 295    |         |     | Jiu     |       |            |
|            |     |        |             |     |     |       |            |      |     |       |          | -,,    |         |     |         |       |            |

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|   |     |                |       |       |      |      |       |       |       |        |       |        |        |       | ,110  | VFUI  | SE1: 3342. | tv.raw |
|---|-----|----------------|-------|-------|------|------|-------|-------|-------|--------|-------|--------|--------|-------|-------|-------|------------|--------|
|   | 146 | CITIC          | 200   | 220   | CCA  | CAC  | maa   | OTTO: | maa.  | N CITT | mm/C  | CITIC! | m/cm   | CAC   | CAC   | C 3 3 | አጥሮ        | 963    |
|   | 147 |                |       |       |      |      | TCG   |       |       |        |       |        |        |       |       |       |            | 363    |
|   | 148 |                | ser   | ASII  | Ald  | Asp  | Ser   | ьeu   | ser   | IIII   | Pne   |        | ser    | GIU   | GIII  | GIII  |            |        |
|   | 149 | 300            |       |       |      |      | 305   |       |       |        |       | 310    |        |       |       |       | 315        |        |
|   | 150 | <b>CID 3</b>   | 3.00  | 030   | 03.0 | aaa  | 003   | C 2 E | mma   | 202    | ааш   | ama    | 7 CITI | CITIA | an a  | шаа   | CCN        | 1011   |
|   | 151 |                |       |       |      |      | GCA   |       |       |        |       |        |        |       |       |       |            | 1011   |
|   | 152 | GIu            | ser   | GIn   | GIu  |      | Ala   | Asp   | Leu   | Thr    | _     | vai    | Thr    | Val   | GIn   |       | Pro        |        |
|   | 153 |                |       |       |      | 320  |       |       |       |        | 325   |        |        |       |       | 330   |            |        |
|   | 154 |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 155 |                |       |       |      |      | CTG   |       |       |        |       |        |        |       |       |       |            | 1059   |
|   | 156 | GIY            | Glu   | Ala   |      | Cys  | Leu   | Leu   | GIA   |        | Ala   | GIu    | Ala    | GLu   | _     | Ser   | GIn        |        |
|   | 157 |                |       |       | 335  |      |       |       |       | 340    |       |        |        |       | 345   |       |            |        |
|   | 158 |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 159 |                |       |       |      |      | GTT   |       |       |        |       |        |        |       |       |       |            | 1107   |
|   | 160 | Arg            | Arg   | Arg   | Leu  | Leu  | Val   | Pro   | Ala   | Asn    | Gly   | Ala    | Asp    |       | Thr   | Glu   | Thr        |        |
|   | 161 |                |       | 350   |      |      |       |       | 355   |        |       |        |        | 360   |       |       |            |        |
|   | 162 |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 163 |                |       |       |      |      | GAC   |       |       |        |       |        |        |       |       |       |            | 1155   |
|   | 164 | Leu            | Met   | Leu   | Phe  | Phe  | Asp   | Lys   | Phe   | Ala    | Asn   | Ile    | Val    | Pro   | Phe   | Asp   | Ser        |        |
|   | 165 |                | 365   |       |      |      |       | 370   |       |        |       |        | 375    |       |       |       |            |        |
|   | 166 |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 167 | TGG            | GAC   | CAG   | CTC  | ATG  | AGG   | CAG   | CTG   | GAC    | CTC   | ACG    | AAA    | TAA   | GAG   | ATC   | GAT        | 1203   |
|   | 168 | $\mathtt{Trp}$ | Asp   | Gln   | Leu  | Met  | Arg   | Gln   | Leu   | Asp    | Leu   | Thr    | Lys    | Asn   | Glu   | Ile   | Asp        |        |
|   | 169 | 380            |       |       |      |      | 385   |       |       |        |       | 390    |        |       |       |       | 395        |        |
|   | 170 |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 171 | GTG            | GTC   | AGA   | GCT  | GGT  | ACA   | GCA   | GGC   | CCA    | GGG   | GAT    | GCC    | TTG   | TAT   | GCA   | ATG        | 1251   |
|   | 172 | Val            | Val   | Arg   | Ala  | Gly  | Thr   | Ala   | Gly   | Pro    | Gly   | Asp    | Ala    | Leu   | Tyr   | Ala   | Met        |        |
|   | 173 |                |       |       |      | 400  |       |       |       |        | 405   |        |        |       |       | 410   |            |        |
|   | 174 |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 175 |                |       |       |      |      | AAC   |       |       |        |       |        |        |       |       |       |            | 1299   |
|   | 176 | Leu            | Met   | Lys   | Trp  | Val  | Asn   | Lys   | Thr   | Gly    | Arg   | Asn    | Ala    | Ser   | Ile   | His   | Thr        |        |
|   | 177 |                |       |       | 415  |      |       |       |       | 420    |       |        |        |       | 425   |       |            |        |
|   | 178 |                | _     |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 179 |                |       | GAT   | GCC  | TTG  | GAG   | AGG   | ATG   | GAA    | GAG   | AGA    | CAT    | GCA   | AAA   | GAG   | AAG        |        |
|   | 180 | 134            |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 181 | Leu            | Leu   | Asp   | Ala  | Leu  | Glu   | Arg   | Met   | Glu    | Glu   | Arg    | His    | Ala   | Lys   | Glu   | Lys        |        |
|   | 182 |                |       | 430   |      |      |       |       | 435   |        |       |        |        | 440   |       |       |            |        |
|   | 183 |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
| > | 184 | ATT            | CAG   | GAC   | CTC  | TTG  | GTG   | GAC   | TCT   | GGA    | AAG   | TTC    | ATC    | TAC   | TTA   | GAA   | GAT        | 1395   |
|   | 185 | Ile            | Gln   | Asp   | Leu  | Leu  | Val   | Asp   | Ser   | Gly    | Lys   | Phe    | Ile    | Tyr   | Leu   | Glu   | Asp        |        |
|   | 186 |                | 445   |       |      |      |       | 450   |       |        |       |        | 455    |       |       |       |            |        |
|   | 187 |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 188 | GGC            | ACA   | GGC   | TCT  | GCC  | GTG   | TCC   | TTG   | GAG    | TGA   | AGAC   | CTC 1  | CTTTT | CACCA | \G    |            | 1442   |
|   | 189 | Gly            | Thr   | Gly   | Ser  | Ala  | Val   | Ser   | Leu   | Glu    |       |        |        |       |       |       |            |        |
|   | 190 | 460            |       |       |      |      | 465   |       |       |        |       |        |        |       |       |       |            |        |
|   | 191 |                |       |       |      | _    |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 192 | AGGI           | TTCC  | TC 1  |      | , ,  | 'A GO | AGTI  | 'AATA | CAT    | 'ATTA | GGT    | TTTT   | TTTT. | TT    |       |            |        |
| > | 193 | TTTA           | ACAT  | GT    | ( 15 | 102  |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 194 |                |       |       |      |      | ١     |       |       |        |       |        |        |       |       |       |            |        |
|   | 195 | ATAC           | 'AAAC | TA A  | ATTO | TTAG | C CA  | CGTG  | TATI  | ' GGC  | TCCI  | GCC    | TGT    | ATC   | CA    |       |            |        |
| > | 196 | TCAC           | TTTC  | GG    | 15   | 62/  |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 197 |                |       |       | _    |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   | 198 | AGGC           | TGAC  | CGC C | GGTG | GATO | C AC  | TTGA  | GGTC  | CGA    | AGTI  | CCA    | AGAC   | CAGO  | CCC   |       |            |        |
|   | •   |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |
|   |     |                |       |       |      |      |       |       |       |        |       |        |        |       |       |       |            |        |

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|            |                   | INFU1 SE1: 534210.raw  |  |
|------------|-------------------|--|--|
| >          | 199               | TGAACCAACA 1622  |  |
|            | 200               |  |  |
| _          | 201<br><b>202</b> | TCGTGGAAAT GCCCGTCTTT TACAAAAAA TACCAAAAAT TCAACTGGAA TGTGCATGGT 1682  |  |
| >          | 202               | TGTGCATGGT 1682  |  |
|            | 203               | GTGTGCCATC ATTTCCTCGG CTAACTACGG GAGGTCTGAG GCCAGGAGAA   |  |
| >          | 205               | TOCA COTTOA 1742   |  |
|            | 206               | 1 Mention of the second of the |  |
|            | 207               | CCCCACGAAG GACAGTGTAG ACTGCAGATT GCACCACTGC ACTCCCAGCC TGGGAACACA 1802  GAGCAAGACT CTGTCTCAAG ATAAAATAAA ATAAACTTGA AAGAATTATT   |  |
| >          | 208               | TGGGAACACA 1802  |  |
|            | 209               |  |  |
|            | 210               | GAGCAAGACT CTGTCTCAAG ATAAAATAAA ATAAACTTGA AAGAATTATT   |  |
| >          | 211               | GCCCGACTGA 1862  |  |
|            | 212               | •  |  |
|            | 213               | GGCTCACATG CCAAAGGAAA ATCTGGTTCT CCCCTGAGCT GGCCTCCGTG   |  |
| >          | 214               | TGTTTCCTTA 1922  |  |
|            | 215<br>216        | TCATGGTGGT CAATTGGAGG TGTTAATTTG AATGGATTAA GGAACACCTA   |  |
| >          | 217               | GAACACTGGT 1982  |  |
|            | 218               | UNICACIOSI 1702  |  |
|            | 219               | AAGGCATTAT TTCTGGGACA TTATTTCTGG GCATGTCTTC GAGGGTGTTT   |  |
| >          | 220               | CCAGAGGGGA 2042  |  |
|            | 221               |  |  |
|            | 222               | TTGGCATGCG ATCGGGTGGA CTGAGTGGAA AAGACCTACC CTTAATTTGG   |  |
| >          | 223               | GGGGGCACCG 2102  |  |
|            | 224               |  |  |
|            | 225               | TCCGACAGAC TGGGGAGCAA GATAGAAGAA AACAAAAAAA AAAAAAAAAA   |  |
|            | 226<br>227        | 2152   |  |
|            | 228               | $\cdot$  |  |
|            |                   |  |  |
|            | 831               | (2) INFORMATION FOR SEQ ID NO:6:   |  |
|            | 832               |  |  |
|            | 833               | (i) SEQUENCE CHARACTERISTICS:  |  |
| >          | <b>834</b><br>835 | (A) LENGTH: 426 base pairs (B) TYPE: nucleic acid  |  |
|            | 836               | (C) STRANDEDNESS: single   |  |
|            | 837               | (D) TOPOLOGY: linear   |  |
|            | 838               | (5) 10102011 211041  |  |
|            | 839               | (ii) MOLECULE TYPE: DNA (genomic)  |  |
|            | 840               | (11) MOLECULE TYPE: DNA (GENOMIC)  |  |
|            | 841               | $\wedge$ $\mathcal{M}^{r}$   |  |
|            | 842               |  |  |
|            | 843               | •  |  |
|            | 844               | (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:  |  |
|            | 845<br>846        | GGCANAGGTN CGTACCTAGC TCACCTGCAA CCATCAAACT TNATGATCAA   |  |
|            | 847               | TCAATTGGCA 60  |  |
| <b>-</b> . | 848               | 10mm111000m1 00  |  |
|            | 849               | CACAGCAATG GGAAACATAG CCCTTTGGAA GANTTGTNTC CACCAGGATC   |  |
| >          | 850               | TCATAGATCA 120   |  |
|            | 851               |  |  |
|            | 852               | AAACATCCTG GGAGCCTGTT AACCGGTGCC CCAAAGGNTG GTCAAGGTCA   |  |

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|---|-----|------------|------------|------------|------------|------------|---------------------|-----|
| > | 853 | AGGAATTGTT | 180        |            |            |            |                     |     |
|   | 854 |            |            |            |            |            |                     |     |
|   | 855 | NCGCCCTGGA | AGTGAACATC | GAGTGTNTCC | ACAAAGGATT | CAGGCAATGG |                     |     |
| > | 856 | GACATAAATA | 240        |            |            |            |                     |     |
|   | 857 |            |            |            |            |            |                     |     |
|   | 858 | TATGGGTGAA | TTTTGGTTGT | GAACTTTGGT | TGNTCCCGTT | GNTGTTGNTG |                     |     |
| > | 859 | GCTGTGCTGA | 300        |            | •          |            |                     |     |
|   | 860 |            |            |            |            |            |                     |     |
|   | 861 | TTGTTTGTTG | TTGCATCGGC | TTCAGGTTNT | GGAGGGGGAC | CCAAGTGCAT |                     |     |
| > | 862 | GGACAGGGTG | 360        |            |            |            |                     |     |
|   | 863 |            |            |            |            |            |                     |     |
|   | 864 | TGTTTCTGGG | GTTTGGGTCT | CTTAGAGGGC | NTGGGTTANG | GCANGTTCAC |                     |     |
| > | 865 | AAGGGTTTTA | 420        |            |            |            |                     |     |
|   | 866 |            |            |            | •          |            |                     |     |
|   | 867 | GCAANG     | ·          |            |            |            |                     | 426 |
|   | 868 | •          |            |            |            |            |                     |     |
|   |     |            |            |            | •          | •          |                     |     |

|   | 869 | (2) INFORMATION FOR SEQ ID NO:7:                       |   |
|---|-----|--|---|
|   | 870 |  |   |
|   | 871 | (i) SEQUENCE CHARACTERISTICS:                          |   |
| > | 872 | (A) LENGTH: 339 base pairs                             |   |
|   | 873 | (B) TYPE: nucleic acid                                 |   |
|   | 874 | (C) STRANDEDNESS: single                               |   |
|   | 875 | (D) TOPOLOGY: linear                                   |   |
|   | 876 | $\cdot$  |   |
|   | 877 | (ii) MOLECULE TYPE: DNA (genomic)  Manual              |   |
|   | 878 | · A me   |   |
|   | 879 |  |   |
|   | 880 | //   |   |
|   | 881 | ,  |   |
|   | 882 | (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:                |   |
|   | 883 |  |   |
|   | 884 | TGGGGCTGAG GACAATGCTG ACNACGAGAT TCTGAGCAAC GCAGNACTNG |   |
| > | 885 | CTGTCCACTT 60  |   |
|   | 886 |  |   |
|   | 887 | TCGTCTNTGN GCAGCAAATG GAAAGCCAGG AGCCGGCAGA TTTGACAGGT |   |
| > | 888 | GTCACTGTAC 120   |   |
|   | 889 |  |   |
|   | 890 | AGTCCCCAGG GGAGGCACAG TGTCTGCTGG TGAGTTGGGG ACAGGCCCTT |   |
| > | 891 | GCAAGACCTT 180   |   |
|   | 892 |  |   |
|   | 893 | GTGAGGCAGG GGGTGAAGGC CATGNCTCGG CTTCNNNTGG TCAAAGGGGA |   |
| > | 894 | AGTGGAGCCT 240   |   |
|   | 895 |  |   |
|   | 896 | GAGGGAGATG GGACTTNAGG GGGACGGNGC TGCGTGGGGA AAAAGCAGCC |   |
| > | 897 | ACCNTTTGAC 300   |   |
|   | 898 |  |   |
|   | 899 | AAGGGGGACA GGCATTTTTN CAAATGTGTG CTTNTTGGT 339         |   |
|   | 900 |  |   |
|   | 943 | (2) INFORMATION FOR SEQ ID NO:11:                      | _ |
|   | 944 |  |   |
|   | 945 | (i) SEQUENCE CHARACTERISTICS:                          |   |

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|-------|-----|--|------|
|       |     | INPUT SET: S34210.raw  |      |
| >     | 946 | (A) LENGTH: 29 base pairs  |      |
|       | 947 | (B) TYPE: nucleic acid   |      |
|       | 948 | (C) STRANDEDNESS: single   |      |
|       | 949 | (D) TOPOLOGY: linear   |      |
|       | 950 | (ii) MOLECULE TYPE: DNA (genomic)  |      |
|       | 951 | (ii) MOLECULE TYPE: DNA (genomic)  |      |
|       | 952 | $\mathcal{P}$  |      |
|       | 953 | (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:   |      |
|       | 954 |  |      |
|       | 955 | GCGGGATCCT CAATTATGTC CATTGCCT   | rg   |
|       | 956 | 29   |      |
|       | 957 |  |      |
|       |     |  |      |
|       | 958 | (2) INFORMATION FOR SEQ ID NO:12:  |      |
|       | 959 |  |      |
|       | 960 | (i) SEQUENCE CHARACTERISTICS:  |      |
| >     | 961 | (A) LENGTH: 29 base pairs  |      |
|       | 962 | (B) TYPE: nucleic acid   |      |
|       | 963 | (C) STRANDEDNESS: single   |      |
|       | 964 | (D) TOPOLOGY: linear   |      |
|       | 965 | (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: DNA (genomic)        |      |
|       | 966 | (ii) MOLECULE TYPE: DNA (genomic)  |      |
|       | 967 |  |      |
|       | 968 | (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:   |      |
|       | 969 | /  |      |
|       | 970 | GCGAAGCTTT CAATTATGT   | rc c |
|       | 971 | 29   |      |
|       | 972 |  |      |
|       | 973 |  |      |
|       | 974 |  |      |
|       | 975 |  |      |
|       | 976 |  |      |

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#### SEQUENCE VERIFICATION REPORT PATENT APPLICATION US/09/448,868

DATE: 12/14/1999 TIME: 04:37:45

INPUT SET: S34210.raw

| Line | Error  | Original Text                              |
|------|--|--|
| 32   | Wrong application Serial Number                    | (A) APPLICATION NUMBER: TO BE ASSIGNED     |
| 54   | Entered (2152) and Calc. Seq. Length (1453) differ | (A) LENGTH: 2152 base pairs                |
| 75   | # of Sequences for line conflicts w/ running total | GCG TTC CTG GCA GTG ACT CCG AAT CCC GGG AG |
| 184  | # of Sequences for line conflicts w/ running total | ATT CAG GAC CTC TTG GTG GAC TCT GGA AAG TT |
| 193  | # of Sequences for line conflicts w/ running total | TTTAACATGT 1502                            |
| 196  | # of Sequences for line conflicts w/ running total | TCACTTTGGG 1562                            |
| 199  | # of Sequences for line conflicts w/ running total | TGAACCAACA 1622                            |
| 202  | # of Sequences for line conflicts w/ running total | TGTGCATGGT 1682                            |
| 205  | # of Sequences for line conflicts w/ running total | TCCACTTGAA 1742                            |
| 208  | # of Sequences for line conflicts w/ running total | TGGGAACACA 1802                            |
| 211  | # of Sequences for line conflicts w/ running total | GCCCGACTGA 1862                            |
| 214  | # of Sequences for line conflicts w/ running total | TGTTTCCTTA 1922                            |
| 217  | # of Sequences for line conflicts w/ running total | GAACACTGGT 1982                            |
| 220  | # of Sequences for line conflicts w/ running total | CCAGAGGGGA 2042                            |
| 223  | # of Sequences for line conflicts w/ running total | GGGGCACCG 2102                             |
| 834  | Entered (426) and Calc. Seq. Length (76) differ    | (A) LENGTH: 426 base pairs                 |
| 847  | # of Sequences for line conflicts w/ running total | TCAATTGGCA 60                              |
| 850  | # of Sequences for line conflicts w/ running total | TCATAGATCA 120                             |
| 853  | # of Sequences for line conflicts w/ running total | AGGAATTGTT 180                             |
| 856  | # of Sequences for line conflicts w/ running total | GACATAAATA 240                             |
| 859  | # of Sequences for line conflicts w/ running total | GCTGTGCTGA 300                             |
| 862  | # of Sequences for line conflicts w/ running total | GGACAGGGTG 360                             |
| 865  | # of Sequences for line conflicts w/ running total | AAGGGTTTTA 420                             |
| 872  | Entered (339) and Calc. Seq. Length (89) differ    | (A) LENGTH: 339 base pairs                 |
| 885  | # of Sequences for line conflicts w/ running total | CTGTCCACTT 60                              |
| 888  | # of Sequences for line conflicts w/ running total | GTCACTGTAC 120 `                           |
| 891  | # of Sequences for line conflicts w/ running total | GCAAGACCTT 180                             |
| 894  | # of Sequences for line conflicts w/ running total | AGTGGAGCCT 240                             |
| 897  | # of Sequences for line conflicts w/ running total | ACCNTTTGAC 300                             |
| 946  | Entered (29) and Calc. Seq. Length (0) differ      | (A) LENGTH: 29 base pairs                  |
| 961  | Entered (29) and Calc. Seq. Length (0) differ      | (A) LENGTH: 29 base pairs                  |